
**GOOSE POND BROOK
MASCOMA RIVER WATERSHED
NEW HAMPSHIRE**

GOOSE POND DAM-BREAK FLOOD ANALYSIS

SEPTEMBER 1984



**US Army Corps
of Engineers**
New England Division

GOOSE POND DAM
DAM-BREAK FLOOD
ANALYSIS

SUBMITTED TO:
DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
WALTHAM, MASSACHUSETTS

SUBMITTED BY:
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GOOSE POND DAM
DAM-BREAK FLOOD ANALYSIS

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GOOSE POND DAM
DAM-BREAK FLOOD ANALYSIS

1. INTRODUCTION AND PURPOSE

This report presents the findings of a dam-break flood analysis performed for Goose Pond Dam. The dam is owned, operated and maintained by the New Hampshire Water Resource Board. Included in the report are a description of pertinent features of the dam, the procedure used for the analysis, the assumed dam-break conditions, and the resulting effect on downstream flooded areas. This study was not performed because of any known likelihood of a dam-break at Goose Pond Dam. Its purpose is to provide quantitative information for emergency planning use.

2. DAM DESCRIPTION

Identification No.	NH0011810
Name of Dam:	Goose Pond Dam
Town:	Canaan
County and State:	Grafton, NH
Stream:	Goose Pond Brook

Goose Pond Dam is located in the central western part of the State of New Hampshire, approximately nine miles northeast of the City of Lebanon. It is a 1,120 foot long earth fill dam that was reconstructed in 1952 with a new upstream face. The maximum height of the dam is 31 feet. The concretre spillway is an Ambursen box type modified for flood discharge. It has an effective length of 50 feet and is topped with sectional flashboards.

3. PERTINENT DATA

Data is taken from "Phase I Inspection Report" for Goose Pond Dam dated May 1979.

a. Drainage Area

Goose Pond as shown on the U.S.G.S. Quadrangle Sheet (Plate 1) is located on the headwaters of Goose Pond Brook. It has a total drainage area of 15.7 square miles and the watershed is highly wooded and mountainous.

b. Elevation (N.G.V.D.)

- (1) Top of dam - 831.0
- (2) Top of flashboards - 825.0
- (3) Spillway crest (top of concrete) - 820.0

c. Reservoir

- (1) Length of normal pool - 2.5 miles

d. Storage (Acre-Feet)

- (1) Top of dam - 15,800 acre-feet
- (2) Spillway crest - 8,500 acre-feet

e. Reservoir Surface (Acres)

- (1) Top of dam - 740 acres (estimated)
- (2) Spillway crest - 610 acres

f. Dam

(1)	Type	Earth fill embankment
(2)	Length	1,120 feet
(3)	Height	31 feet
(4)	Top Width	12 feet
(5)	Side Slopes	
	(a) Upstream	Approximately 1 vertical to 2.5 horizontal
	(b) Downstream	1 vertical to 2 horizontal
(6)	Zoning	Not applicable
(7)	Impervious core	Not applicable
(8)	Cutoff	Upstream concrete core wall

g. Spillway

(1)	Type	Rectangular (Amburseen)
(2)	Length of weir	Effective length 50 feet
(3)	Crest elevation (top of concrete)	
	(a) Front	823.0
	(b) Sides	820.0
(4)	Flashboard	Pin-type flashboards - 5 feet and 2 feet high
	Crest elevation (top of board)	825.0
(5)	U.S. Channel	Pond

4. VALLEY DESCRIPTION

The river valley below Goose Pond Dam is generally flat with wide floodplains. The outlet of Goose Pond Dam is Goose Pond Brook which joins the Mascoma River approximately 2.5 miles below the Dam. Mascoma River empties into Mascoma Lake 6.6 miles below Goose Pond Dam. A small dam, approximately 19 feet high is located at mile 5.6 below Goose Pond Dam in the Village of Enfield.

5. MODEL DESCRIPTION

The Goose Pond dam-break analysis was made using the HEC version, dated November 1981, of the "National Weather Service Dam-Break Flood Forecasting Computer Model", developed by D.L. Fread, Research Hydrologist, Office of Hydrology, National Weather Service, NOAA, Silver Spring, Maryland 20910. Input for the model consisted of: (a) storage characteristics of the reservoir, (b) selected geometry and duration of the breach development, (c) hydraulic inflows, (d) hydraulic roughness coefficients, and (e) active and inactive flow regions. Based on the input data, the model computes the dam-break outflow hydrograph and routes it downstream. The analysis provides output on the attenuation of the flood stages, and timing of the flood wave as it progresses downstream.

6. ASSUMED DAM BREAK CONDITIONS

General: The magnitude of a flood resulting from the hypothetical failure of Goose Pond Dam is a function of many different parameters including size of breach, initial pool level and storage, rate of breach formation, channel and over bank roughness and antecedent flow conditions. Engineering assumptions of conditions which could be reasonably expected to exist prior to a failure of Goose Pond Dam and were used in the analysis are presented below:

- (1) Initial Pool Level: 827.5 feet N.G.V.D., 2.5 feet above top of flashboards.
- (2) Reservoir Inflow: Estimated flood of record = 1,960 cfs.

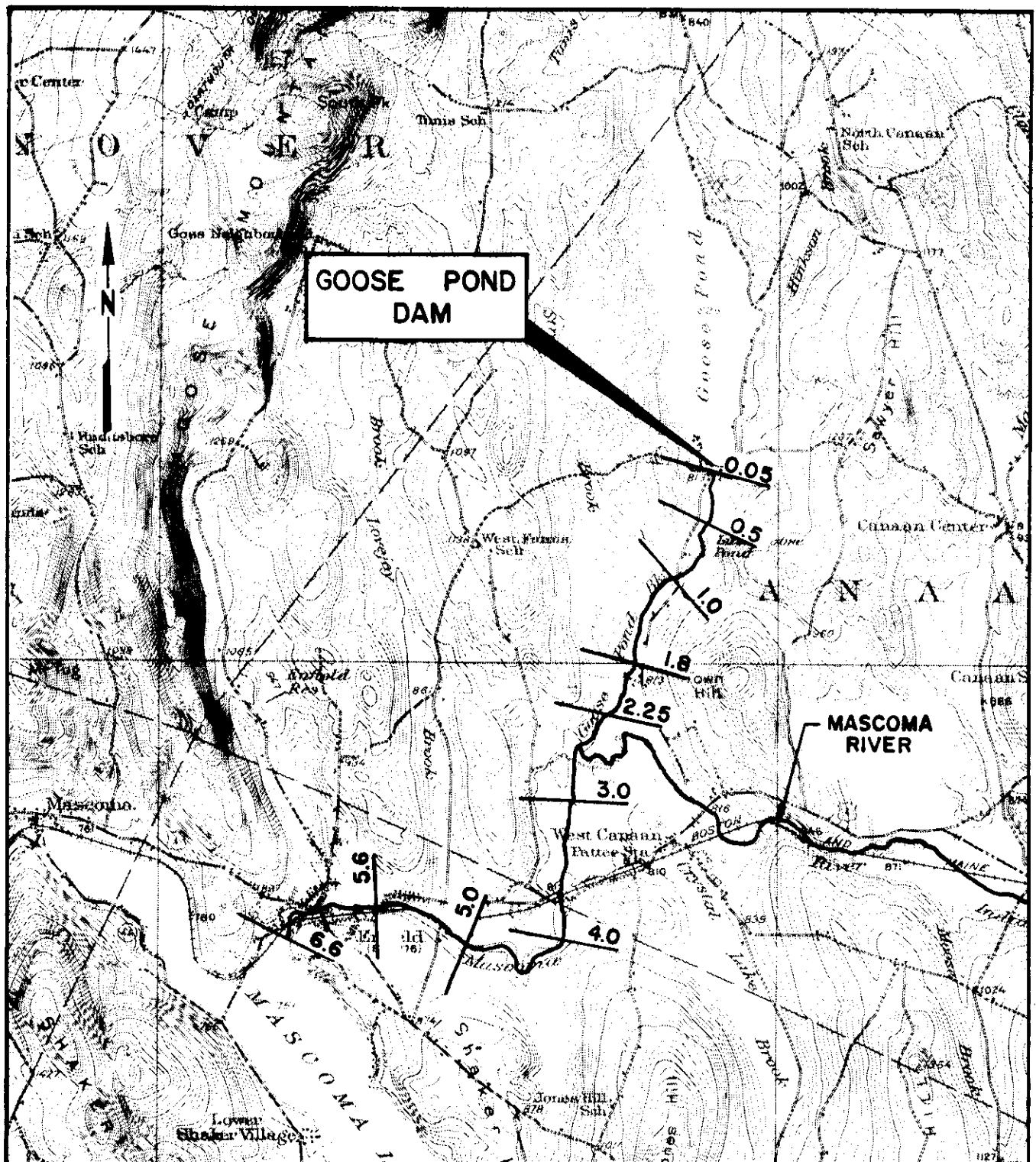
- (3) Breach Invert: 803.5 feet NGVD
- (4) Breach Base Width: 60 feet, trapezodial side slopes 1V: 0.5H.
- (5) Time to Complete Formation of Breach 1 Hour.
- (6) Downstream Channel Roughness: Manning's "n"
= .040 to .140
- (7) Pre-Breach River Flows: The pre-breach river flow was assumed equal to the flood of record which was estimated by using a cfs/sq. mi. value based upon similar drainage area. Inflow to Goose Pond was 1960 cfs and inflow at the Mascoma River confluence was 6225 cfs.

7. RESULTS

The resulting peak stage flood profiles are shown on plate 2 and 3. Because of the scarcity of good topographic mapping in the area, profiles are shown in feet above normal summertime (July-August) low water (NLW). Users of the information can establish depth of flooding at particular properties by establishing its relative elevation with respect to the adjacent stream level. Variations in depth above NLW progressing downstream, is attributable to changes in natural stream hydraulic capacity as well as changes in peak discharge.

The peak dam break discharge from Goose Pond Dam is 21,250 cfs producing a rise of approximately 15 feet above the NLW river depth at a point .05 miles downstream from the dam. At a distance of 5.6 miles below Goose Pond Dam, in the Village of Enfield, peak discharge is 16,000 cfs and the rise over NLW stage would be about 14 feet. Peak discharge, stage and timing for three stations downstream from Goose Pond Dam are shown on plate 4. The stations are located .05, 3.0, 5.6 miles downstream of the dam. Attenuation of the dam-break flood occurs primarily near the confluence of Mascoma River with Goose Pond Brook.

The input data file is in Appendix A, while Appendix B contains the output file.



MAP BASED UPON U.S.G.S.
MASCOMA, N.H.-V.T. QUADRANGLE
1927

CROSS-SECTION LOCATION IN
MILES BELOW DAM

SCALE IN MILES

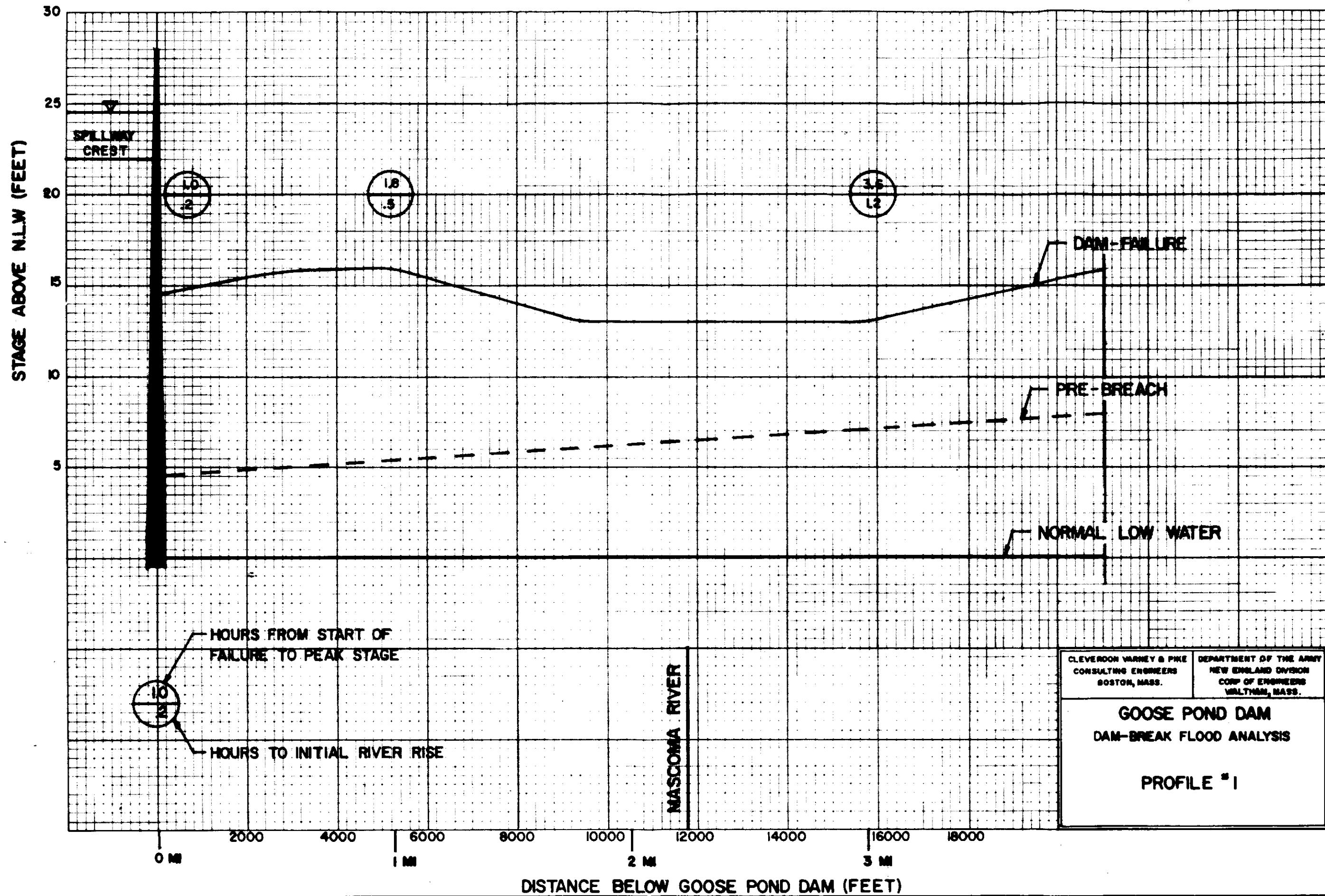


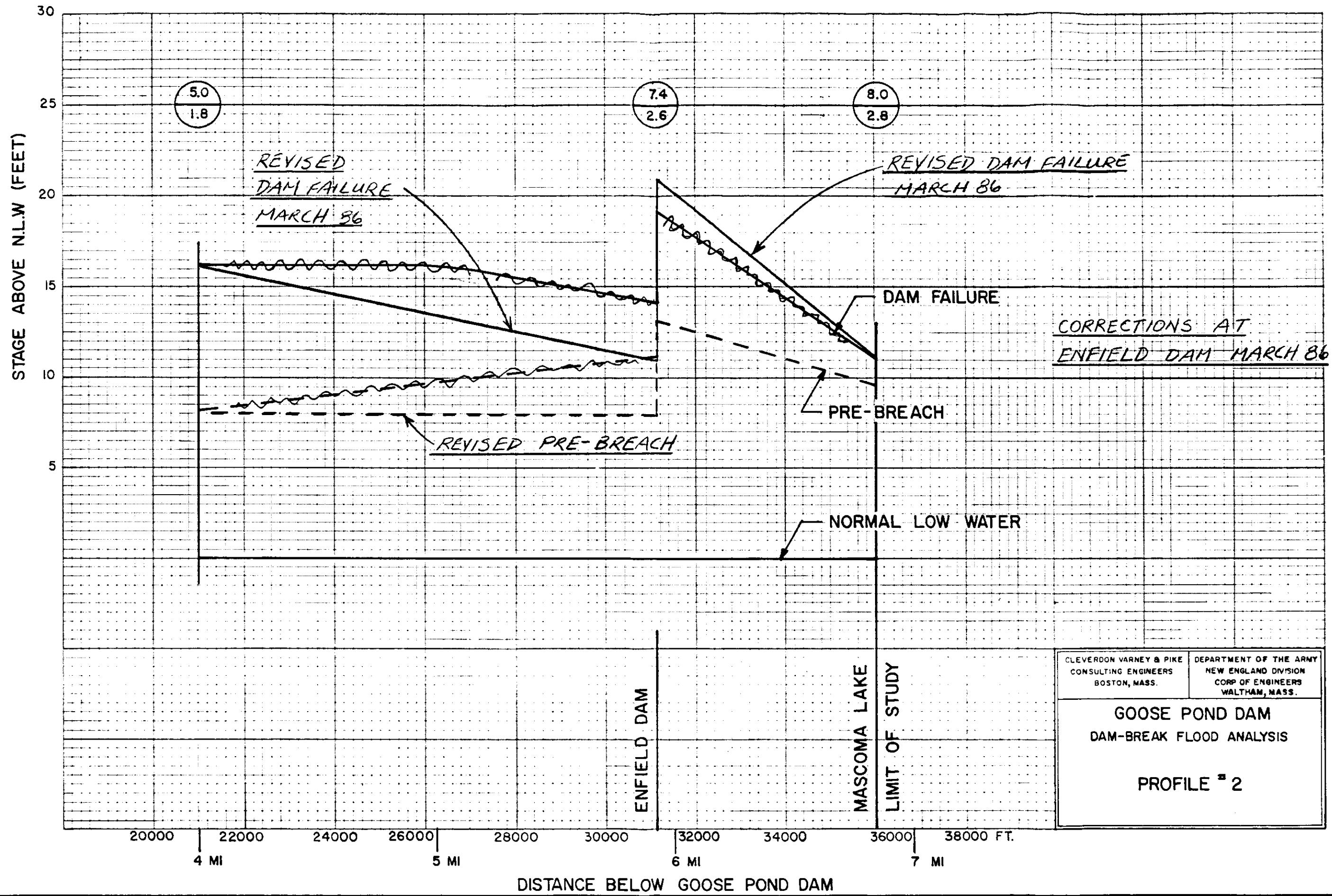
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BOSTON, MASS.

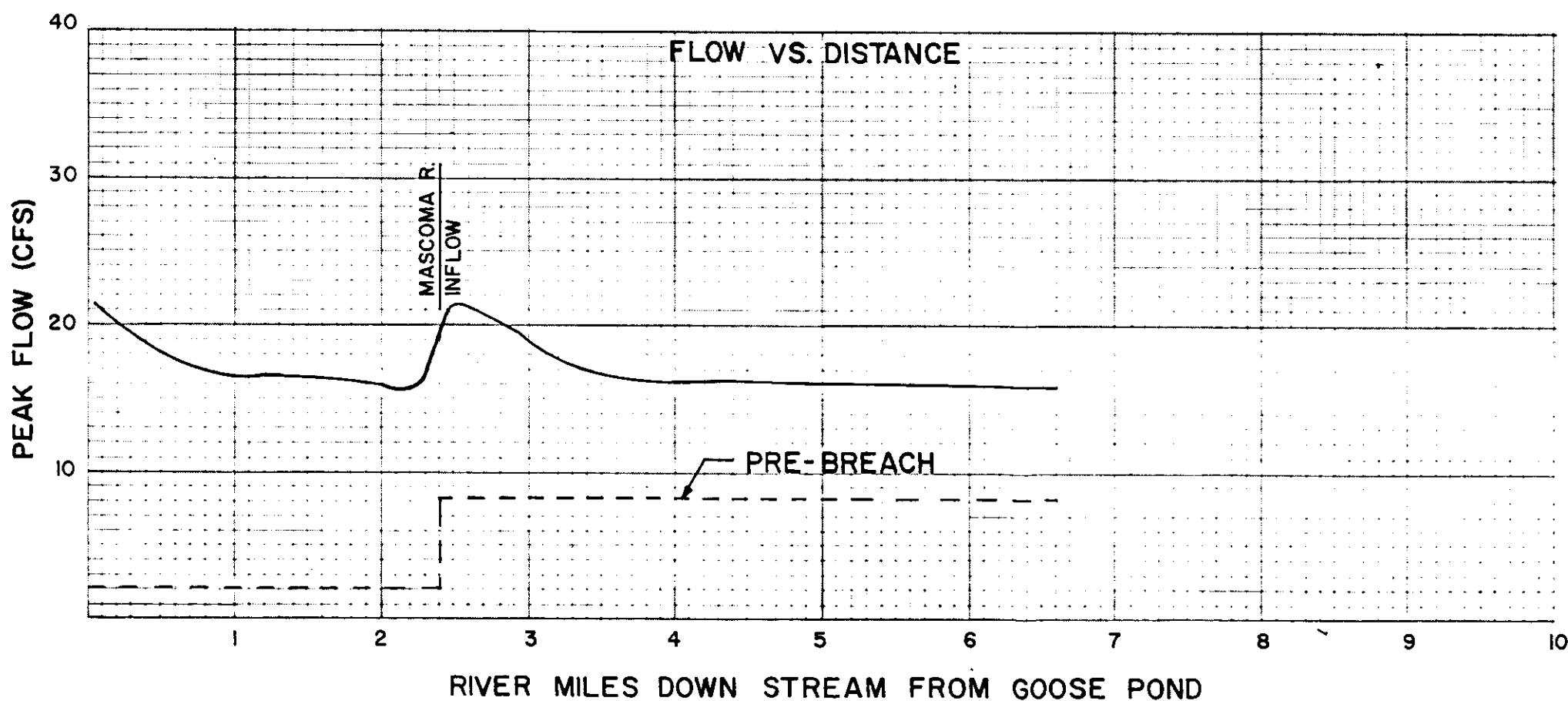
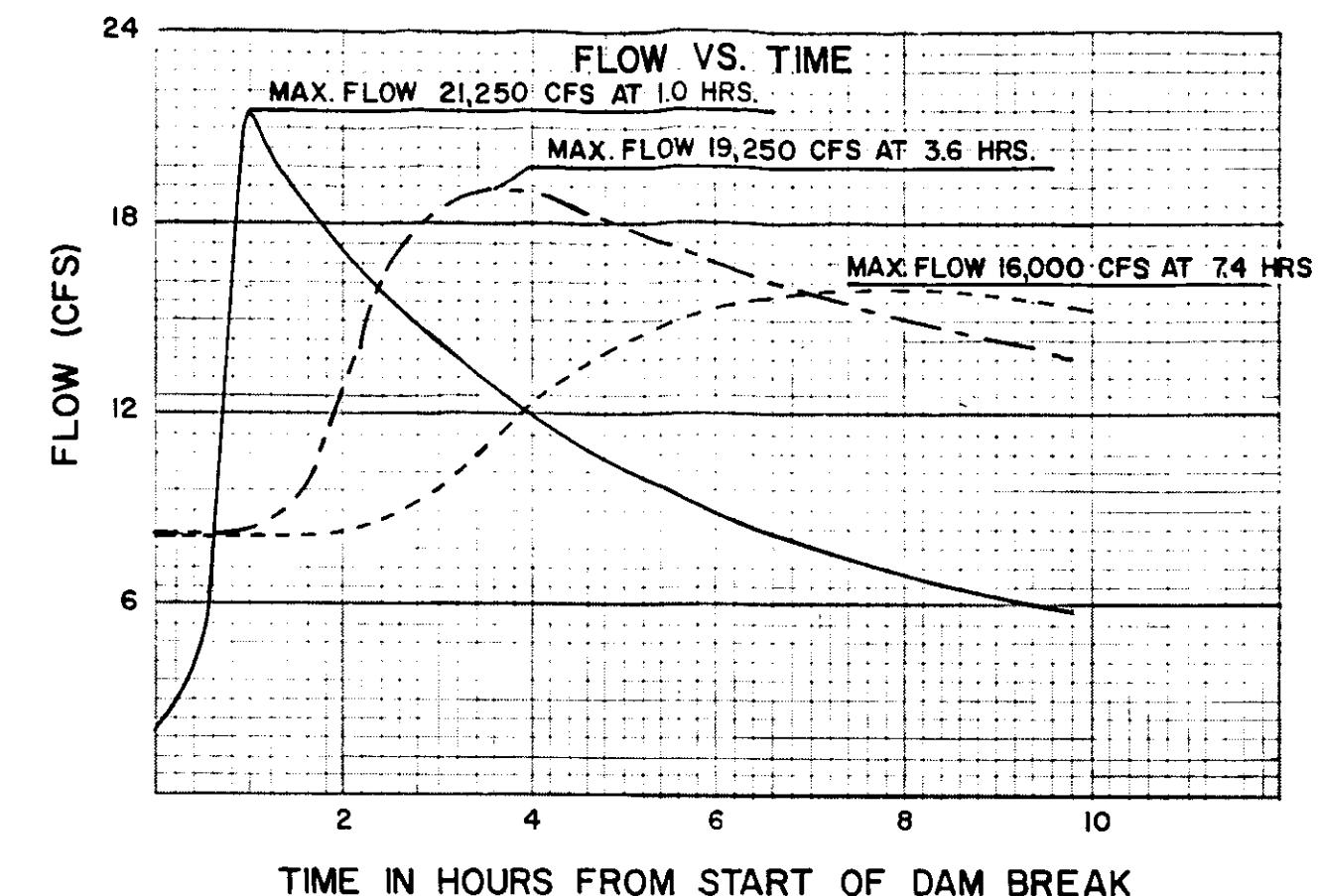
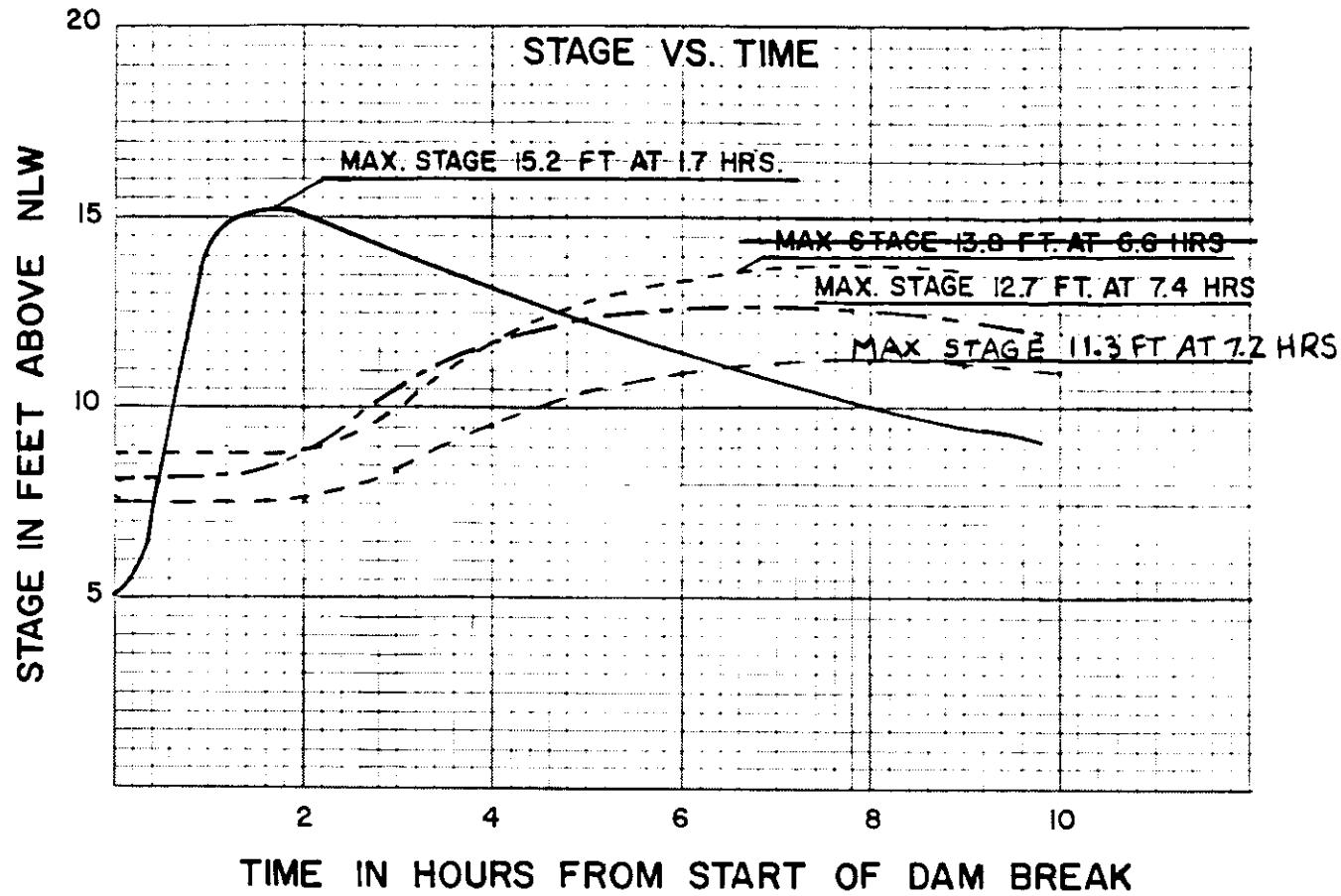
DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORP OF ENGINEERS
WALTHAM, MASS.

GOOSE POND DAM
DAM-BREAK FLOOD ANALYSIS

INDEX MAP







NLW DATUM (FT. NGVD)

STA. 1 RM. 0.05=808.0 —
STA. 2 RM. 3.0 = 794.0 ---
STA. 3 RM. 5.6 = 782.0 - - -
RM. 5.9 ABOVE DAM 793 - - -
RM. 5.9 BELOW DAM 770

CORRECTIONS AT ENFIELD DAM
MARCH 86

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**GOOSE POND DAM
DAM-BREAK FLOOD ANALYSIS**

**BASE FLOOD DISCHARGES
STAGES & TIMING**

*HECFORMAT
 *ECHO
 *FORMATTED
 *10FIELDS
 *COMPOSITE
 ID GOOSE POND LAKE DAM
 ID GOOSE POND BROOK
 ID G MERCER
 ID CV&P ENGS
 ID BOSTON, MA
 IO 9 10 10
 IP 3 0
 QI 1960
 SN GOOSE POND
 SE 831 825 820 813.5 803.5 803.0
 SA 740 688 610 500 376 0.0
 DN GOOSE POND DAM
 DD 831 825 0 827.5 5 .06 803.5
 DB 1 827.5 60 803.5 .5
 DO 0 511 0 2500
 DN ENFIELD DAM
 DD 800 786 0 10 .06 769
 DO 0 325 0 2500
 RN REACH 1 TO ENFIELD DAM @ MILE 5.6
 RG 1 6 9
 RC 794.6 0 0.0 0.0
 XI 0.05 .10
 XE 807 816 821 826 831 836 841 846
 XC 33 340 595 993 1165 1324 1420 1516
 NC .040 .050 .060 .070 .080 .090 .100 .110
 XI 0.5 .10
 XE 804 810 815 820 825 830 835 840
 XC 30 386 683 980 1047 1115 1182 1250
 NC .040 .050 .060 .070 .080 .090 .100 .110
 XI 1.0 .20
 XE 802 810 815 820 825 830 835 840
 XC 30 363 571 780 1172 1565 1957 2350
 NC .040 .050 .060 .070 .080 .090 .100 .110
 XI 1.8 .20
 XE 801 807 812 817 822 827 832 837
 XC 30 249 720 990 1410 1590 2130 2380
 NC .040 .050 .060 .070 .080 .090 .100 .110
 XI 2.25 .20
 XE 797 810 815 820 825 830 835 840
 XC 30 530 1100 1600 2000 2660 2990 3120
 XO 0 900 915 1000 730 660 0 0
 NC .040 .050 .060 .070 .080 .090 .100 .110
 QN 2.25 MASCOMA RIVER
 QL 6225
 XI 3.0 .20
 XE 793 804 810 816 822 828 834 840
 XC 30 905 1100 1820 2000 2480 2900 3330
 XO 0 3400 4187 4600 5065 5007 5008 5000
 NC .040 .045 .050 .055 .060 .070 .080 .100
 XI 4.0 .30

XE	789	797	804	811	818	825	833	840
XC	30	386	604	751	898	1553	2532	3390
NC	.040	.050	.060	.070	.080	.090	.100	.110
XI	5.0						.30	
XE	784	792	800	808	816	824	832	840
XC	30	275	520	1352	2184	2760	3080	3400
NC	.040	.050	.060	.070	.080	.090	.100	.110
XI	5.6							
XE	781	789	797	805	813	821	829	837
XC	30	250	450	1200	1800	2200	3000	3200
NC	.040	.060	.080	.100	.110	.120	.130	.140
RN	REACH 2 TO MASCOMA LAKE							
RG	2							
RC	0.0	0	0.0	0.0				
XI	5.6						.30	
XE	770	776	781	786	791	796	801	806
XC	40	98	134	169	289	324	367	390
NC	.040	.050	.060	.080	.100	.110	.120	.130
XI	6.6							
XE	750	758	765	772	779	786	793	800
XC	30	200	300	400	600	900	1287	1560
XO	0	306	363	318	172	114	0	0
NC	.040	.050	.060	.070	.080	.090	.100	.110
ZZ								

LLT: GOONOSSEPP 11 5511
=> LT GOONSP 1 51

1 *HECFORMAT

2 *ECHO

3 *10FTFLDS

4 *COMPOSITE

5 TO GOOSE POND LAKE RM

6 TO GOOSE POND BROOK

7 TO COE NEW ENGLAND RTV

8 TO 9 10 10

9 TP 3 4

10 RT 1960

11 SN GOOSE POND

12 SF 831 825 820 813.5 803.5 803

13 RA 740 688 610 500 376

14 RN GOOSE POND DAM

15 RR 831 825 0 822.5 5 .06 803.5

16 RR 1 827.5 60 803.5 .5

17 RR 0 511 0 2500

18 TINENETFL DAM

19 RR 796.3 792.8 0 10 .06 769

20 RR 0 325 0 150

21 RN REACH 1 TO ENFIELD DAM P MILE 5.6

22 RG 1 4 6 9

23 RC 800.5 0 0

24 XT .05 .10

25 XE 807 816 821 826 831 836 841 846

26 XC 33 340 595 993 1165 1324 1420 1516

27 NC .04 .05 .06 .07 .08 .09 .1 .11

28 XT .5 .1

29 XE 804 810 815 820 825 830 835 840

30 XC 30 386 683 980 1047 1115 1182 1250

31 NC .04 .05 .06 .07 .08 .09 .1 .11

32 XT 1.0 .2

33 XE 802 810 815 820 825 830 835 840

34 XC 30 363 571 780 1172 1565 1957 2350

35 NC .04 .05 .06 .07 .08 .09 .1 .11

36 XT 1.8 .2

37 XE 801 807 812 817 822 827 832 837

38 XC 30 249 720 990 1410 1590 2130 2380

39 NC .04 .05 .06 .07 .08 .09 .1 .11

40 XT 2.25 .2

41 XE 797 810 815 820 825 830 835 840

42 XC 30 530 1100 1600 2000 2660 2990 3120

43 XO 0 900 915 1000 730 660

44 NC .04 .05 .06 .07 .08 .09 .1 .11

45 RN 2.25 MASCOMA RIVER

46 RL 6225

47 XT 3.0 .2

48 XE 793 804 810 816 822 828 834 840

49 XC 30 905 1100 1820 2000 2480 2900 3330

50 XO 0 3400 4187 4600 5066 5007 5008 5000

51 NC .04 .045 .05 .055 .06 .07 .08 .1

INPUT DATA FILE
APPENDIX A
REVISED MARCH 86

CHOOSE-SECTIONING INPUT AND TIME PEAK

SECT NO.	SEG NO.	RIVERM	ESTG(M)	XSL(M)	YSL(M)	YD(M)	DYML(M)	FNO(M)
45	***	770	776	781	782	781	784	801
28	***	40	96	134	162	289	324	367
388	***							700
78	***	1048	1050	1052	1050	102	110	110
SECT NO.	SEG NO.	RIVERM	ESTG(M)	XSL(M)	YSL(M)	YD(M)	DYML(M)	FNO(M)
45	***	750	756	765	771	776	781	791
28	***	30	100	300	400	288	307	327
388	***	0	304	362	316	170	114	0

PROGRAM DAMBRI--VERSION-A-@ 1/30/82

B-1

ANALYSIS OF THE DOWNSTREAM FLOOD HYDROGRAPH

PRODUCED BY THE DAM BREAK OF

GOOSE POND LAKE DAM

ON

GOOSE POND BRIDGE

ANALYZED BY

G MERCER
CV&P ENGS
BOSTON, MA

BASED ON PROCEDURE DEVELOPED BY

DANNY L. FREADY, PH.D., RESEARCH HYDROLOGIST
HYDROLOGIC RESEARCH LABORATORY
NOAA, OFFICE OF HYDROLOGY
NOAA, NATIONAL WEATHER SERVICE
SILVER SPRING, MARYLAND 20910

*** SUMMARY OF INPUT DATA ***

INPUT CONTROL PARAMETERS FOR GOOSE POND LAKE DAM

PARAMETER	VARIABLE	VALUE
NUMBER OF HYDRAULIC ROUTING STEPS	NHN	1
TYPE OF RESERVOIR Routing	RUL	0
MULTIPLER DAM INROUTING	MULDM	0
ROUTING NUMBER, ATTACHED TO EACH ROUTING SUMMARY	ROUTN	0
NUMBER OF DEBITS IN THE HYDROGRAPH ROUTING	NTCH	1
INTERNAL NUMBER OF SECTIONS IN THE PATH OF OUTLET STREAM (ROUTE)	INTS	0
ROUTING-LINK NUMBER PARAMETER	ROUTP	0
LANDSLIDE PARAMETER	LSL	0

GOOSE POND LAKE DAM REServoir

TABLE OF ELEVATION VS SURFACE AREA

SURFACE AREA (ACRES) SA (A.)	ELEVATION (FT) ELEV (E.)
740.0	801.00
588.0	818.00
51.0	812.00
500.0	817.00
374.0	803.50
3.0	807.00

0.0	827.00
0.2	8.00
0.4	0.00

GOOSE POND LAKE DAM RESERVOIR AND BREACH PARAMETERS

PARAMETER	UNITS	VARIABLE	VALUE
LENGTH OF RESERVOIR	ft	RLEN	8.00
ELEVATION OF WATER SURFACE	ft	WQ	827.50
BREACH SLOPE OF BREACH		S	.50
ELEVATION OF BOTTOM OF BREACH	ft	WBMIN	827.50
WIDTH OF BREACH OR FRACTURE	ft	FB	60.00
TIME T MAXIMUM BREACH SIZE	s	TMAX	1.00
ELEVATION (MSL) OF BOTTOM OF DAM	ft	DATUM	823.50
VOLUME-SURFACE AREA PARAMETER		VOL	0.00
ELEVATION OF WATER WHEN BREACHED	ft	WF	827.50
ELEVATION OF TOP OF DAM	ft	WD	821.00
ELEVATION OF UNCONTROLLED SPILLWAY CREST	ft	WSP	828.00
ELEVATION OF CENTER OF GATE OPENINGS	ft	WG	0.00
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY	ft	SDC1	51.00
DISCHARGE COEF. FOR GATE FLOW	ft	SDC2	0.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW	ft	SDC3	2500.00
DISCHARGE THRU TURBINES	cfs	SDC4	0.00

DELTA INTERVAL BETWEEN INPUT HYDROGRAPH ORDINATES = 10.00 SEC.

TERMINATION TIME AT WHICH COMPUTATIONS TERMINATE = 10.0000 SEC.

INFLOW HYDROGRAPH TO GOOSE POND LAKE DAM

1960.00

TIME OF INFLOW HYDROGRAPH ORDINATES

0.0000

1

CROSS-SECTONAL PARAMETERS FOR GOOSE POND BROOK
BELOW GOOSE POND LAKE DAM

PARAMETER	VARIABLE	VALUE
NUMBER OF CROSS-SECTIONS	NCS	3
MAXIMUM NUMBER OF TOP WIDTHS	NCS	3
NUMBER OF CROSS-SECTIONAL HYDROGRAPHS TO PLT	NTT	3
TYPE OF CURVE OTHER THAN HYDROGRAPH PLT	ONR	0
CROSS-SECTIONAL SMOOTHING PARAMETER	ASA	3
DOWNSSTREAM SUPERCRITICAL OR NOT	ASLPL	0
NO. OF LATERAL INFLOW HYDROGRAPHS	LQ	0
NO. OF POINTS IN GATE CONTROL CURVE	KCG	3

B-4

NUMBER OF CROSS-SECTION WHERE HYDROGRAPH DESIRED
MAX NUMBER OF HYDROGRAPHS = 6.CROSS-SECTIONAL VARIABLES FOR GOOSE POND BROOK
BELOW GOOSE POND LAKE DAM

PARAMETER	POINTS	VARIABLE
LOCATION OF CROSS-SECTION	MI	CSL1
ELEVATION MSL OF RIVER BOTS AT CROSS-SECTION FT	FTN1	
ELEV. CORRESPONDING TO EACH TOP WIDTH	FT	TSW1
TOP WIDTH CORRESPONDING TO EACH ELEV	FT	TSW1
ACTIVE FLOW PARTITION		
TOP WIDTH CORRESPONDING TO EACH ELEV	FT	TSW1
OFF-CHANNEL PARTITION		
SURFACE AREA CORRESPONDING TO EACH ELEV	ACRES	SA1
ACTIVE FLOW PARTITION		
SURFACE AREA CORRESPONDING TO EACH ELEV	ACRES	SA1
OFF-CHANNEL PARTITION		
NUMBER OF CROSS-SECTION		
NUMBER OF ELEVATION LEVEL		

10. *W. E. B. DuBois*, *The Souls of Black Folk* (1903), p. 10.

1970-58171-2 NUMBER 1

Year	1950	1951	1952	1953	1954	1955	1956	1957
HS ...	807.0	816.0	821.0	826.0	831.0	836.0	841.0	846.0
PE ...	33.0	340.0	555.0	993.0	1165.0	1214.0	1220.0	1216.0
PEE ...	8.0	5.0	3.0	2.5	2.0	2.0	2.0	2.0

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CROSS-SECTION NUMBER 4

CHARGE=SETUP FOR NAME=+

CROSS-SECTION NUMBER 5

XS(I) = 2.250 PSTD(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

PS ... 797.0 810.0 815.0 820.0 825.0 830.0 835.0 840.0

PS ... 30.0 530.0 1100.0 1600.0 2000.0 2660.0 2990.0 3120.0

PSS ... 2.0 200.0 215.0 1000.0 730.0 560.0 0.0 0.0

CROSS-SECTION NUMBER 6

XS(I) = 7.000 PSTD(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

PS ... 797.0 804.0 810.0 817.0 821.0 828.0 834.0 840.0

PS ... 30.0 525.0 1100.0 1610.0 2000.0 2460.0 2820.0 3110.0

PSS ... 2.0 3400.0 4137.0 4600.0 5065.0 5007.0 5008.0 5000.0

B-6

CROSS-SECTION NUMBER 7

XS(I) = -300 PSTD(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

PS ... 797.0 797.0 804.0 811.0 818.0 825.0 832.0 840.0

PS ... 30.0 564.0 604.0 171.0 265.0 1557.0 1671.0 1330.0

PSS ... 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

CROSS-SECTION NUMBER 8

XS(I) = 9.000 PSTD(I) = 0.00 XSL(I) = 0.0 XSR(I) = 0.0

PS ... 797.0 802.0 800.0 808.0 815.0 824.0 831.0 840.0

PS ... 30.0 575.0 600.0 1352.0 2184.0 2750.0 2092.0 3400.0

PSS ... 2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

CROSS-SECTION NUMBER =

XSL(I) = 5.600 FETS(I) = 0.00 REA(I) = 0.0 XSR(I) = 0.0

HS ... 761.0 759.0 757.0 755.0 615.0 613.0 611.0 609.0 507.0

PS ... 30.0 250.0 450.0 1000.0 1800.0 1820.0 1830.0 3000.0 3200.0

PSS ... 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

MAPPING IN RIVERBED TO LEFT, IDENTIFYING THE GOOSE REACHES
CROSS-SECTION WHERE I = REACH NUMBER

REACH 1040 .050 .060 .070 .080 .090 .100 .110

REACH 2040 .050 .060 .070 .080 .090 .100 .110

REACH 3040 .050 .060 .070 .080 .090 .100 .110

REACH 4040 .050 .060 .070 .080 .090 .100 .110

REACH 5040 .050 .060 .070 .080 .090 .100 .110

REACH 6040 .050 .060 .070 .080 .090 .100 .110

REACH 7040 .050 .060 .070 .080 .090 .100 .110

REACH 8040 .050 .060 .070 .080 .090 .100 .110

CROSS-SECTIONAL VARIABLES FOR GOOSE POND BROOF
BELOW GOOSE POND LAKE DAM

PARAMETER

UNITS VARIABLE

*****		*****	*****
MINIMUM COMPUTATIONAL DISTANCE USED BETWEEN CROSS-SECTIONS		MI	DXM(I)
CONTRACTION - EXPANSION COEFFICIENTS BETWEEN CROSS-SECTIONS			EKC(I)

REACH NUMBER	DXM(I)	EKC(I)
1	.100	0.000
2	.100	0.000
3	.100	0.000
4	.100	0.000
5	.100	0.000
6	.100	0.000
7	.100	0.000
8	.100	0.000

B-8

DOWNSTREAM FLOW PARAMETERS FOR GOOSE POND BRANCH
DELTA GOOSE POND LAKE DAM

PARAMETER	NOTE	VARIABLE	VALUE
MAX DEPTH CHANGE AT EACH STREAM ELEMENT	FTS	UMAXD	0.2
MAX LATERAL INFLUX PER FT OF LENGTH = 4550	FTS FT	LLI	0.000
INITIAL RISE OF TIME STEP	FT	DTIM	0.0000
INITIAL WATER SURFACE ELEVATION IN DOWNSTREAM	FT	LEN	794.50
SLUDGE IN CHANNEL UPSTREAM OF DAM	FTS M	SLU	10.00
THETA WEIGHTING FACTOR		THETA	0.00
CONVERGENCE CRITERION FOR STAGE	FT	EPSY	0.000
TIME AT WHICH DAM STARTS TO FAIL	FT	TEF	0.20

LATERAL INFLOW REACH NUMBER

LOG IN

12-10-1984
2025.

TOTAL VOLUME IN RESERVOIR BEHIND
GOOSE POND LAKE DAM = 13673.6 ACRE-FEET

DEFINITION OF VARIABLES IN RESERVOIR DEPLETION TABLE

PARAMETER	UNITS	VARIABLE
TIME STEP FROM START OF ANALYSIS	FT	
ITERATIONS NECESSARY TO SOLVE FLOW EQUATIONS	FT	
ELAPSED TIME FROM START OF ANALYSIS	FTS	TTIME
TOTAL OUTFLOW FROM DAM	CFPS	QOUT
ELEVATION OF WATER SURFACE AT DAM	FT	H2
ELEVATION OF BOTTOM OF BREACH	FT	VB
EST DEPTH OF FLOW IMMEDIATELY DOWNSTREAM	FT	D
SUBMERGENCE COEFFICIENT		SUB
VELOCITY CORRECTION		VCORR
TOTAL VOLUME DISCHARGED FROM TIME OF BREACH A FT ³		QVOL
BREACH WIDTH FT	FT	BD
RECTANGULAR BREACH DISCHARGE COEFFICIENT		QFRC
INFLOW TO RESERVOIR	CFPS	QIN
BREACH OUTFLOW	CFPS	QBRECH
SPILLWAY OUTFLOW	CFPS	QSPIL

RESERVOIR DEPLETION TABLE

I	TTIME	QIN	HD	VB	H	SUB	VCORR	QVOL	BD	QFRC	QIN	QBRECH	QSPIL
1	0 0.000	2019	827.50	827.50	811.43	1.00	1.00	0.0	0.0	3.10	1960.	0.	2020.
2	.020	2021	827.50	827.00	811.43	1.00	1.00	0.3	1.2	3.10	1960.	1.	2020.
3	.040	2027	827.50	826.54	812.43	1.00	1.00	6.7	2.4	3.10	1960.	8.	2020.
4	.060	2041	827.50	826.06	813.45	1.00	1.00	10.0	3.6	3.10	1960.	22.	2015.
5	.080	2054	827.50	825.58	812.46	1.00	1.00	13.4	4.8	3.10	1960.	46.	2019.
6	.100	2098	827.50	825.10	812.52	1.00	1.00	16.6	6.0	3.10	1960.	80.	2019.
7	.120	2144	827.50	824.62	812.58	1.00	1.00	20.4	7.2	3.10	1960.	124.	2018.
8	.140	2203	827.50	824.14	812.64	1.00	1.00	24.0	8.4	3.10	1960.	186.	2018.
9	.160	2275	827.50	823.66	812.73	1.00	1.00	27.7	9.6	3.10	1960.	259.	2017.
10	.180	2363	827.50	823.18	812.83	1.00	1.00	31.5	10.8	3.10	1960.	348.	2016.

ADDEDOPT DEPLETION TABLE

		TYPE	IN	OUT	R	VE	D	SUP	LOW	QUANTUM	E1	DEP	SI	ABFECH	REFL
---	--	*****	*****	*****	*****	*****	*****	----	----	-----	----	-----	----	-----	-----
181	1	1.298	17837	803.50	803.50	803.50	803.50	.80	.00	2074.5	60.0	3.10	1960.	17917.	8.
182	1	1.298	17838	804.50	803.50	803.50	803.50	.79	.00	2001.5	60.0	3.10	1960.	17921.	8.
183	1	1.341	18940	804.50	803.50	803.50	803.50	.80	.00	1233.5	60.0	3.10	1960.	16841.	8.
184	1	1.364	18947	804.50	803.50	803.50	803.50	.80	.00	1367.5	60.0	3.10	1960.	16865.	8.
185	1	1.365	18948	805.50	803.50	803.50	803.50	.80	.00	1345.5	60.0	3.10	1960.	16864.	8.
186	1	1.382	18953	805.50	803.50	803.50	803.50	.79	.00	1377.5	60.0	3.10	1960.	16874.	8.
187	1	1.428	18959	805.50	803.50	803.50	803.50	.80	.00	1468.5	60.0	3.10	1960.	16815.	8.
188	1	1.440	18962	805.50	803.50	803.50	803.50	.81	.00	1440.5	60.0	3.10	1960.	16755.	8.
189	1	1.460	18963	805.50	803.50	803.50	803.50	.80	.00	1472.5	60.0	3.10	1960.	16805.	8.
190	1	1.480	18936	805.50	803.50	803.50	803.50	.79	.00	1503.5	60.0	3.10	1960.	16637.	8.
191	1	1.500	18951	805.50	803.50	803.50	803.50	.80	.00	1534.5	60.0	3.10	1960.	16878.	8.
192	1	1.520	18959	805.50	803.50	803.50	803.50	.80	.00	1565.5	60.0	3.10	1960.	16515.	8.
193	1	1.540	18961	805.50	803.50	803.50	803.50	.80	.00	1596.5	60.0	3.10	1960.	16441.	8.
194	1	1.560	18964	805.50	803.50	803.50	803.50	.80	.00	1627.5	60.0	3.10	1960.	16401.	8.
195	1	1.580	18957	805.50	803.50	803.50	803.50	.80	.00	1658.5	60.0	3.10	1960.	16343.	8.
196	1	1.600	18944	805.50	803.50	803.50	803.50	.80	.00	1688.5	60.0	3.10	1960.	16285.	8.
197	1	1.620	18945	805.50	803.50	803.50	803.50	.80	.00	1719.5	60.0	3.10	1960.	16214.	8.
198	1	1.640	18968	805.50	803.50	803.50	803.50	.80	.00	1749.5	60.0	3.10	1960.	16167.	8.
199	1	1.660	18911	805.50	803.50	803.50	803.50	.80	.00	1779.5	60.0	3.10	1960.	16109.	8.
200	1	1.680	18915	805.50	803.50	803.50	803.50	.80	.00	1809.5	60.0	3.10	1960.	16050.	8.
201	1	1.700	18961	805.50	803.50	803.50	803.50	.80	.00	1839.5	60.0	3.10	1960.	17991.	8.
202	1	1.720	17987	805.50	803.50	803.50	803.50	.80	.00	1869.5	60.0	3.10	1960.	17931.	8.
203	1	1.740	17994	805.50	803.50	803.50	803.50	.80	.00	1899.5	60.0	3.10	1960.	17970.	8.
204	1	1.760	17943	805.50	803.50	803.50	803.50	.81	.00	1928.5	60.0	3.10	1960.	17812.	8.
205	1	1.780	17972	805.50	803.50	803.50	803.50	.80	.00	1958.5	60.0	3.10	1960.	17783.	8.
206	1	1.800	17703	805.50	803.50	803.50	803.50	.81	.00	1987.5	60.0	3.10	1960.	17653.	8.
207	1	1.820	17825	805.50	803.50	803.50	803.50	.80	.00	2018.5	60.0	3.10	1960.	17631.	8.
208	1	1.840	17965	805.50	803.50	803.50	803.50	.80	.00	2048.5	60.0	3.10	1960.	17570.	8.
209	1	1.860	17905	804.50	803.50	803.50	803.50	.81	.00	2078.5	60.0	3.10	1960.	17505.	8.
210	1	1.880	17944	804.50	803.50	803.50	803.50	.80	.00	2108.5	60.0	3.10	1960.	17441.	8.
211	1	1.900	17776	804.50	803.50	803.50	803.50	.81	.00	2137.5	60.0	3.10	1960.	17378.	8.
212	1	1.920	17915	804.50	803.50	803.50	803.50	.81	.00	2168.5	60.0	3.10	1960.	17315.	8.
213	1	1.940	17251	804.50	803.50	803.50	803.50	.81	.00	2189.5	60.0	3.10	1960.	17253.	8.
214	1	1.960	17190	804.50	803.50	803.50	803.50	.81	.00	2218.5	60.0	3.10	1960.	17190.	8.
215	1	1.980	17126	804.50	803.50	803.50	803.50	.80	.00	2248.5	60.0	3.10	1960.	17035.	8.

123	0	3.428	13237	822.38	803.50	820.05	.75	1.00	4053.7	60.0	3.10	1960.	13237.	0.
124	0	3.591	12864	820.15	803.50	819.88	.75	1.00	4229.3	60.0	3.10	1960.	12865.	0.
125	0	3.770	12472	921.20	803.50	819.70	.74	1.00	4415.8	60.0	3.10	1960.	12472.	0.
126	0	3.957	12060	821.64	803.50	819.51	.73	1.00	4601.5	60.0	3.10	1960.	12060.	0.
127	0	4.144	11630	821.36	803.50	819.30	.73	1.00	4828.6	60.0	3.10	1960.	11630.	0.
128	0	4.422	11183	821.06	803.50	819.07	.72	1.00	5053.3	60.0	3.10	1960.	11183.	0.
129	0	4.684	10721	820.75	803.50	818.84	.71	1.00	5290.7	60.0	3.10	1960.	10722.	0.
130	0	4.973	10247	820.42	803.50	818.59	.70	1.00	5540.6	60.0	3.10	1960.	10247.	0.
131	0	5.260	9763	920.08	803.50	818.34	.69	1.00	5802.9	60.0	3.10	1960.	9753.	0.
132	0	5.539	9271	819.71	803.50	818.05	.68	1.00	6077.4	60.0	3.10	1960.	9172.	0.
133	0	5.823	8774	819.35	803.50	817.76	.66	1.00	6363.7	60.0	3.10	1960.	8777.	0.
134	0	6.445	8148	818.96	803.50	817.45	.65	1.00	6660.8	60.0	3.10	1960.	8248.	0.
135	0	6.910	7763	818.57	803.50	817.14	.64	1.00	6968.1	60.0	3.10	1960.	7764.	0.
136	0	7.410	7316	818.18	803.50	816.84	.63	1.00	7286.5	60.0	3.10	1960.	7316.	0.
137	0	7.782	6846	817.78	803.50	816.48	.61	1.00	7615.4	60.0	3.10	1960.	6846.	0.
138	0	8.162	6370	817.39	803.50	816.14	.60	1.00	7952.5	60.0	3.10	1960.	6370.	0.
139	0	8.531	5804	816.91	803.50	815.79	.59	1.00	8299.6	60.0	3.10	1960.	5924.	0.
140	0	8.901	5304	816.53	803.50	815.55	.57	1.00	8651.4	60.0	3.10	1960.	5457.	0.

PARAMETER	UNITS	VARIABLE	VALUE
INITIAL FLOW	cfs	Q1	1000.
MAX FLOW	cfs	Q2	21264.
FINAL FLOW	cfs	Q3	5457.
TIME TO MAX FLOW	hrs	T2	1.00
NUMBER OF TIME STEPS		NST	140
TOTAL VOLUME DISCHARGED FROM RESERVOIR	ACRES	DTOTAL	2651.

PARAMETER	UNITS	VARIABLE	VALUE
ELEVATION AT BREAK	ft	ZB	0.00
ELEVATION AT BOTTOM OF BREAK	ft	ZBM	0.00
HEIGHT OF BASE OF BREAK	ft	ZB	0.00
TIME TO MAXIMUM BREAK Elevation	hrs	TB	10.00
ELEVATION OF WATER WHEN BREACHED	ft	ZB	10.00
ELEVATION OF TOP OF DAM	ft	ZD	632.00
ELEVATION OF LAND SURVEYED RAILWAY CROSS	ft	ZL	755.00

ELEVATION OF UNCONTROLLED SPILLWAY CREST	FT	HT	781.80
ELEVATION OF CENTER OF GATE OPENINGS	FT	HT	781.80
DISCHARGE COEF. FOR UNCONTROLLED SPILLWAY	CG		100.00
DISCHARGE COEF. FOR GATE FLOW	CG		0.00
DISCHARGE COEF. FOR UNCONTROLLED WEIR FLOW	CDD		2500.00
DISCHARGE THRU TURBINES	CFS	CF	0.00

INITIAL CONDITIONS FOR GAGE FLOW DOWNSTREAM
TODAY SINCE PMSI DAME

PARAMETER	UNITS	VARIABLE	VALUE
CRITICAL DEPTH IN UPSTREAM CHANNEL	FT	UPSH	0.00
SLOPE OF DOWNTREAM CHANNEL	FT/MI	BDM	.012000
AVE MANNING'S N IN DOWNTREAM CHANNEL		CMN	.0600
NUMBER OF INTERMEDIATE STATIONS	MILES	INM	26
NUMBER OF TIME STEPS	NNU	NUC	140

TIME PARAMETERS OF DOWNTREAM HYDROGRAPH IMMEDIATELY DOWNSTREAM OF DAM

PARAMETER	UNITS	VARIABLE	VALUE
TIME TO FAILURE	HR	TFH	.000
TIME TO START OF RISING LIME OF HYDROGRAPH	HR	TRH	0.000
TIME TO PEAK	HR	TPH	0.000
TIME STEP SIZE	HR	DTH	.250

RESERVOIR OUTFLOW INFORMATION												
I	K	TT	Q(I)	H2	V2	D	SUP	OUTVOL	BB	OUT(I)	QBRECH	QSPIL
29	1	0.000	8244.9	794.61	10.00	790.56	1.00	0.0	.0	8219.9	0.0	8211.7

RESERVOIR OUTFLOW INFORMATION												
I	K	TT	Q(I)	H2	V2	D	SUP	OUTVOL	BB	OUT(I)	QBRECH	QSPIL
29	0	0.000	8244.9	794.61	10.00	788.55	.07	0.0	.0	8219.9	0.0	8211.7

RESERVOIR OUTFLOW INFORMATION

I	K	TT	Q10	42	YB	D	SUB	OUTVOL	BB	QU10	QBRECH	QSPIL
29	1	0.950	15263.7	798.99	0.20	799.12	.07	10576.2	.0	5505.9	48.7	15215.0

RESERVOIR OUTFLOW INFORMATION

I	K	TT	Q10	42	YB	D	SUB	OUTVOL	BB	QU10	QBRECH	QSPIL
29	1	10.000	15235.0	798.97	0.20	799.09	.07	10639.2	.0	5474.6	48.7	15186.7

ROUTING COMPUTED.

TIME=207 ALLOWABLE TIME= 600 FTE = 12.0

B-14

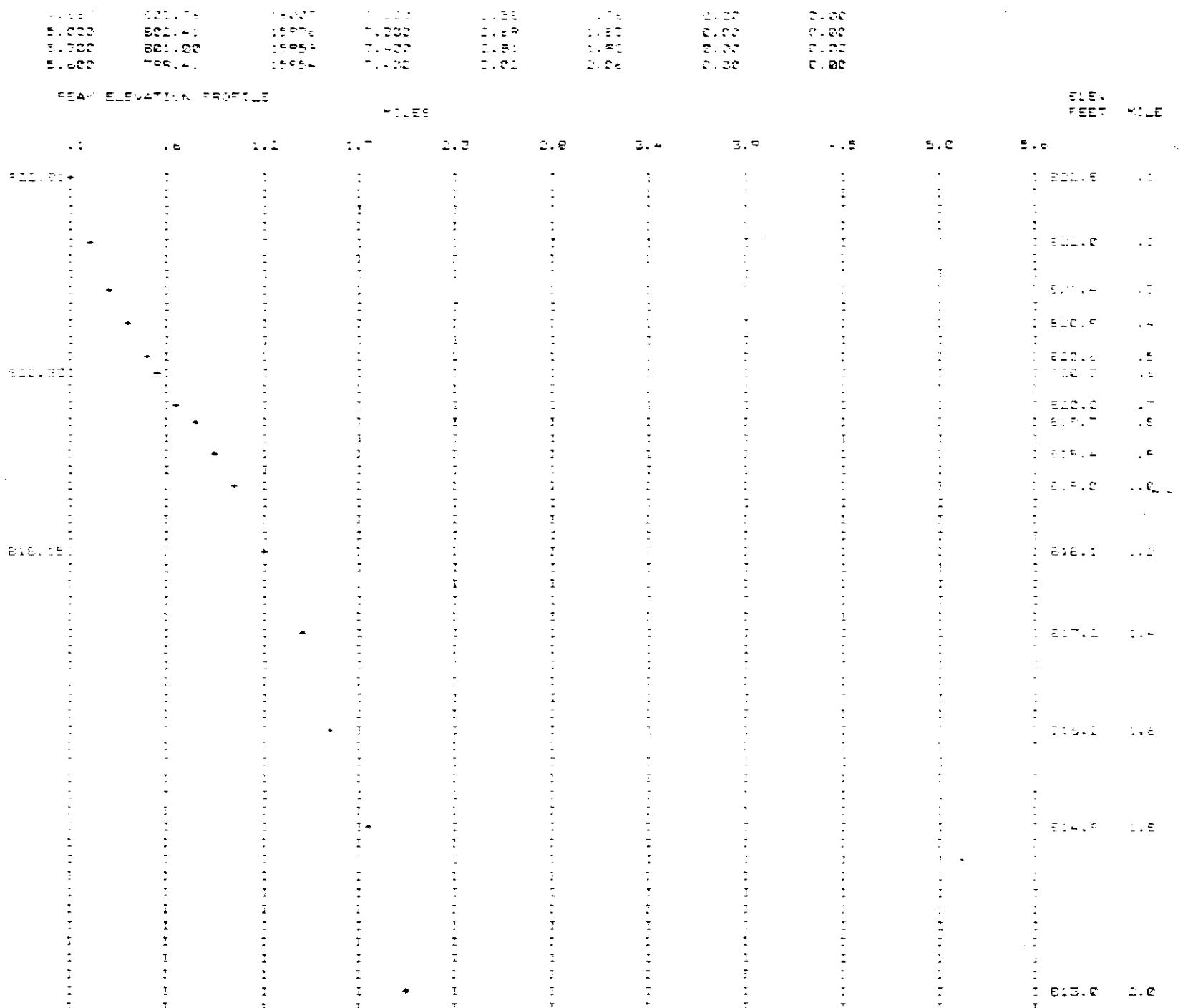
PROFILE OF CRESTS AND TIMES FOR GOOSE RIVER BRANCH
BELOW GOOSE POND LAKE DAM

END MILE FROM DAM	MAX ELEV FT	MAX FLOW CFS	TIME MAX ELEV(HR)	MAX VEL (FT/SEC)	MAX VEL (MI/HR)	FLOOD ELEV FT	TIME FLOOD ELEV (HR)
.050	822.51	10562	1.850	1.14	3.08	0.00	0.00
.163	821.49	10562	1.850	1.14	3.08	0.00	0.00
.175	821.37	10562	1.800	1.19	3.08	0.00	0.00
.382	822.51	10562	1.250	1.10	3.13	0.00	0.20
.500	819.13	10562	1.120	1.00	3.09	0.00	0.30
.530	820.11	10562	1.150	1.02	3.03	0.00	0.30
.732	819.07	10562	1.100	1.00	3.07	0.00	0.30
.803	818.71	10562	1.100	1.00	3.05	0.00	0.30
.900	819.75	10562	0.750	1.00	3.00	0.00	0.30
1.200	819.57	10562	1.700	1.00	3.01	0.00	0.30
1.260	816.19	10562	1.400	1.00	3.16	0.00	0.30
1.300	815.12	10562	1.300	1.00	3.21	0.00	0.30
1.360	815.17	10562	1.300	1.00	3.17	0.00	0.30
1.380	815.22	10562	1.750	1.00	3.02	0.00	0.30
1.405	813.34	10562	2.300	1.00	3.11	0.00	0.30
1.450	811.13	10562	2.250	1.00	3.49	0.00	0.30
1.500	809.29	10562	4.000	1.00	3.04	0.00	0.30
1.750	807.38	10562	2.150	1.00	3.09	0.00	0.30
2.000	807.34	10562	2.520	1.00	3.07	0.20	0.30
2.100	807.39	10562	2.700	1.00	3.03	0.00	0.30
2.400	806.34	10562	2.600	1.00	3.08	0.00	0.30
3.500	826.58	10562	2.250	1.00	3.21	0.00	0.30
3.800	826.18	10562	2.000	1.00	3.08	0.00	0.30
4.100	825.31	10562	2.001	1.00	3.05	0.00	0.30
4.200	824.52	10562	2.100	1.00	3.04	0.00	0.30
4.300	823.74	10562	2.100	1.00	3.03	0.00	0.30

PROFILE OF CRESTS AND TIMES FOR GOOSE PCND BROOK
BELOW ECCRSE POND DA

RVR MILE FROM DAM	MAX CLEV (FT)	MAX FLOW (CFS)	TIME MAX ELEV(HR)	MAX VEL (FT/SEC)	MAX VEL (MI/HR)	FLOOD ELEV (FT)	TIME FLOOD ELEV (HR)
0.050	823.06	22623	1.700	4.57	3.11	0.00	0.00
0.162	822.25	21561	1.850	4.16	2.85	0.00	0.00
0.275	821.63	20812	2.000	3.90	2.66	0.00	0.00
0.387	821.17	19833	2.050	3.30	2.25	0.00	0.00
0.500	820.85	18966	2.100	2.50	1.70	0.00	0.00
0.600	820.51	18400	2.150	2.41	1.65	0.00	0.00
0.700	820.21	18042	2.200	2.40	1.64	0.00	0.00
0.800	819.96	17800	2.250	2.45	1.67	0.00	0.00
0.900	819.61	17630	2.250	2.55	1.74	0.00	0.00
1.000	819.21	17503	2.300	2.67	1.82	0.00	0.00
1.200	818.33	17298	2.400	2.65	1.81	0.00	0.00
1.400	817.45	17133	2.500	2.62	1.83	0.00	0.00
1.600	816.32	16979	2.600	2.77	1.83	0.00	0.00
1.800	815.11	16821	2.800	2.97	2.02	0.00	0.00
2.025	813.31	16555	3.000	3.35	2.23	0.00	0.00
2.250	811.51	16253	3.350	3.55	2.45	0.00	0.00
2.500	809.76	22003	5.800	4.34	2.96	0.00	0.00
2.750	808.93	21040	6.750	3.53	2.40	0.00	0.00
3.000	808.55	15315	7.050	2.45	1.67	0.00	0.00
3.200	808.31	17826	7.150	2.18	1.49	0.00	0.00
3.400	808.21	16842	7.200	1.95	1.33	0.00	0.00
3.600	808.02	16403	7.300	1.90	1.29	0.00	0.00
3.800	807.81	16241	7.350	1.99	1.36	0.00	0.00
4.000	807.55	16180	7.350	2.20	1.53	0.00	0.00
4.333	806.83	16129	7.500	2.08	1.42	0.00	0.00
4.667	806.17	16082	7.600	1.96	1.33	0.00	0.00
5.000	805.46	16044	7.700	1.93	1.25	0.00	0.00
5.333	804.84	16022	7.750	1.74	1.19	0.00	0.00
5.667	804.23	16014	7.750	1.66	1.13	0.00	0.00

CORRECTED MARCH 86



820.

821.

822.

823.

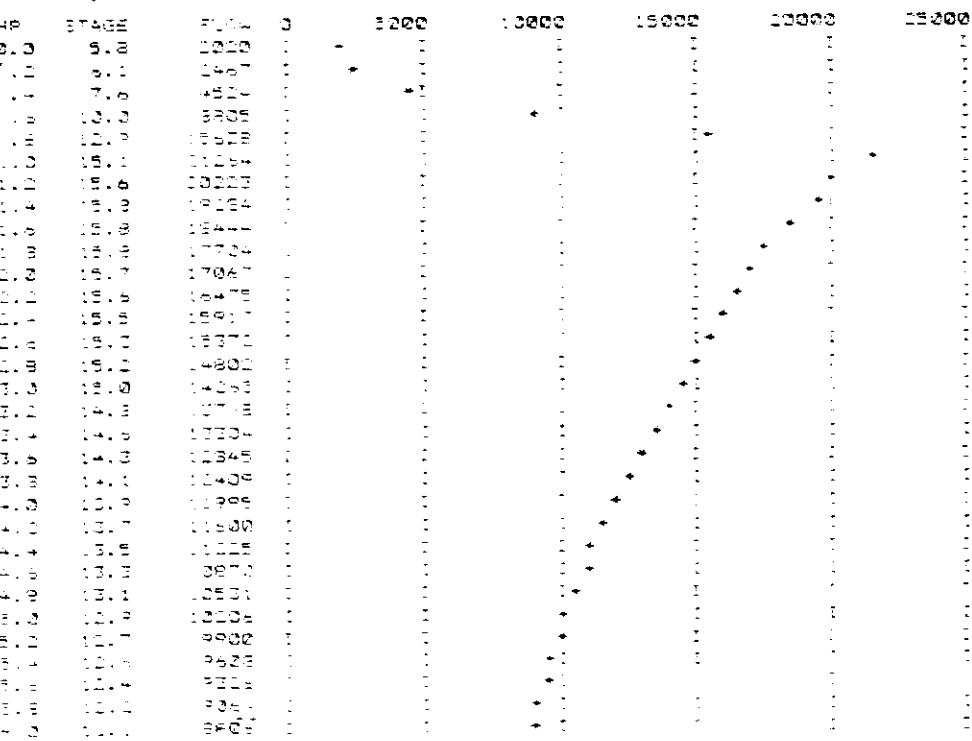
	2.1	.5
	2.0	.3
	1.9	.2
	1.7	.1
	1.6	

Elevation

~~X~~ GOOSE POND BRIDGE STATION NUMBER 1
BELOW GOOSE POND LAKE DAM 4.1 MILE .25

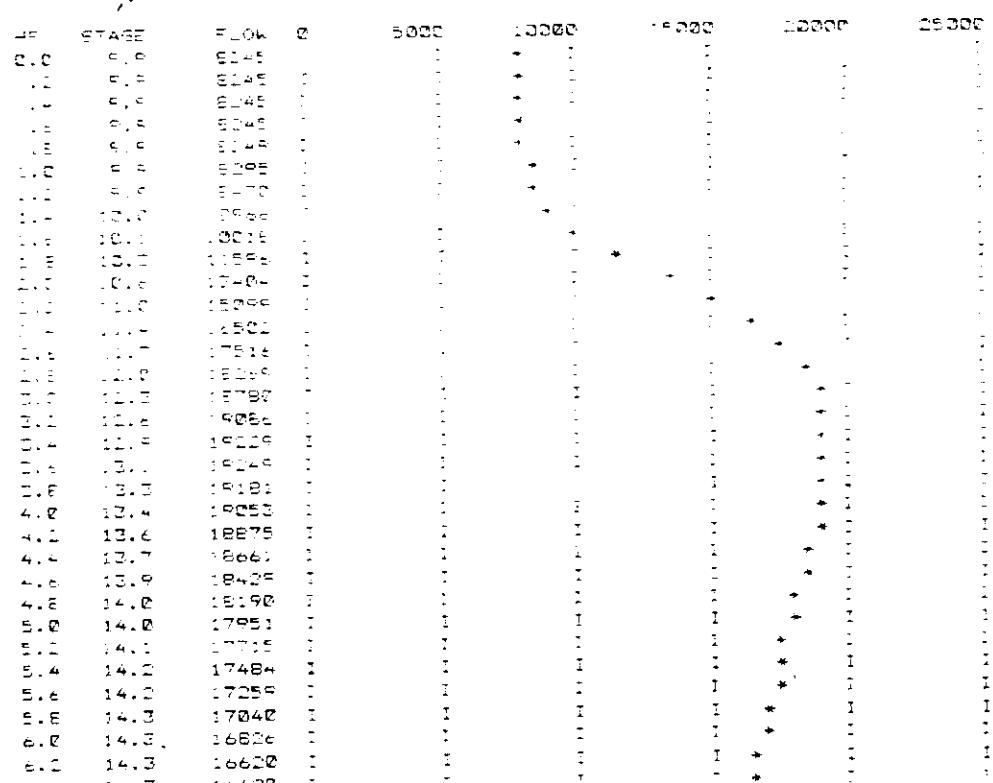
EAGE ZERO = 107.00 MAX ELE ACTION REACHED BY FLOOD WAVE = 812.31
FLOOD STAGE NOT AVAILABLE

MAX STAGE = 16.86 AT TIME = 1.260 HOURS
MAX F.L. = 212.64 AT TIME = 1.360 HOURS



* DISCHARGE HYDROGRAPH FOR GOOSE RIVER FF NO. 111, STATION NUMBER 15
BELOW GOOSE RIVER LAKE DAM AT MILE 5.00

BASE FLOW = 753.00 MAX ELEVATION REACHED BY FLOOD WAVE = 807.34
FLOOD STAGE NOT AVAILABLE
MAX STAGE = 14.34 AT TIME = 5.507 AM IPS
MAX FLOW = 19254 AT TIME = 3.550 AM IPS

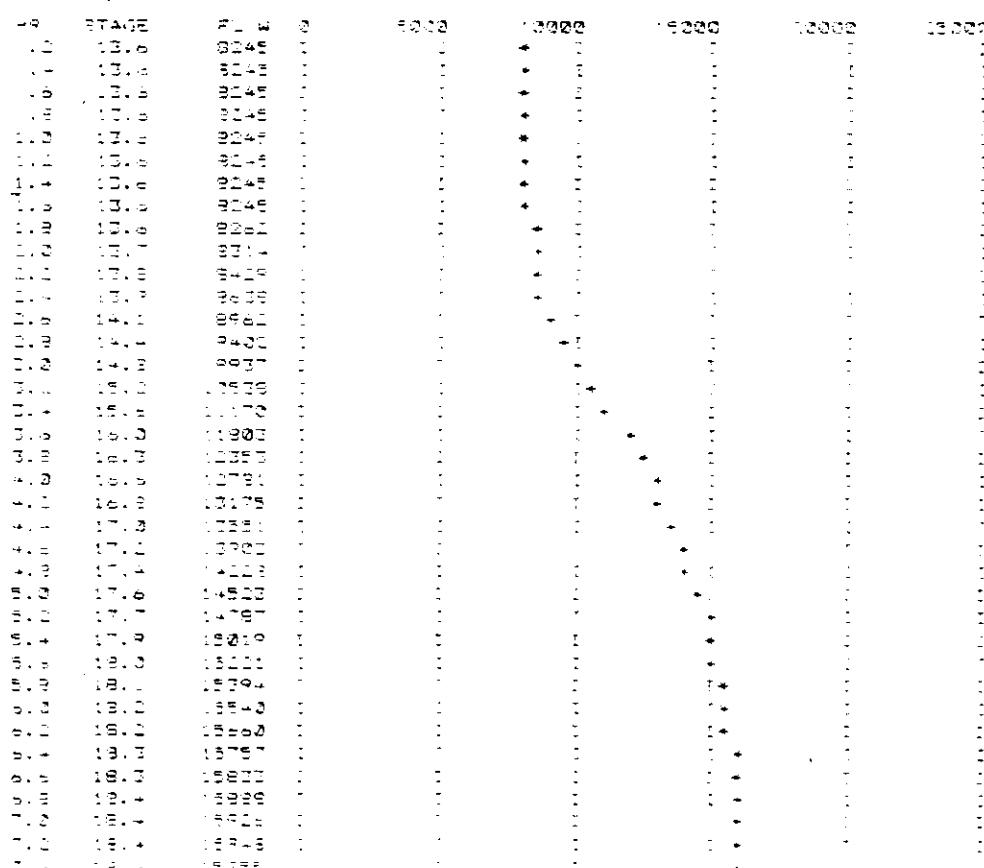


6.6 14.3 16226 +
6.8 14.3 16036 +
7.0 14.3 15851 +
7.2 14.3 15669 +
7.4 14.3 15486 +
7.6 14.3 15309 +
7.8 14.3 15141 +
8.0 14.3 14979 +
8.2 14.3 14824 +
8.4 14.3 14674 +
8.6 14.3 14524 +
8.8 14.3 14381 +
9.0 14.3 14241 +
9.2 14.3 14106 +
9.4 14.3 13974 +
9.6 14.3 13831 +
9.8 14.3 13716 +

* * * * *

* 01974A96 HYDROGRAPHIC DATA STAGE FLOW RECORD NO. 71, STATION NUMBER 19
BELLW. STAGE FLOW LAKE DAM AT MILE 6.30

BASE DEPC = 781.00 MAX ELEVATION REACHED BY FLOWING WAVE = 799.41
FLOW STAGE NOT AVAILABLE
MAX STAGE = 19.41 AT TIME = 7.00 AM 1980
MAX FLOW = 15555 AT TIME = 7.00 AM 1980



DISCHARGE HYDROGRAPH FOR GOOSE FOND BROCK ... STATION NUMBER 29
BELOW GOOSE FOND DA AT MILE 5.60

GAGE ZERO = 781.00 MAX ELEVATION REACHED BY FLOOD WAVE = 804.26
FLOOD STAGE NOT AVAILABLE

MAX STAGE = 23.26 AT TIME = 7.75 HOURS
MAX FLOW = 16015 AT TIME = 7.75 HOURS

HR	STAGE	FLOW	0	5000	10000	15000	20000	25000
5.2	19.5	3245	I	I	*	I	I	I
6.4	19.5	3245	I	I	*	I	I	I
7.6	19.5	3245	I	I	*	I	I	I
8.8	19.5	3245	I	I	*	I	I	I
1.0	19.5	3245	I	I	*	I	I	I
1.2	19.5	3245	I	I	*	I	I	I
1.4	19.5	3245	I	I	*	I	I	I
1.6	19.5	3254	I	I	*	I	I	I
1.8	19.5	3290	I	I	*	I	I	I
2.0	19.6	8373	I	I	*	I	I	I
2.2	19.7	8529	I	I	*	I	I	I
2.4	19.8	6772	I	I	*	I	I	I
2.6	20.0	9996	I	I	*	I	I	I
2.8	20.2	9490	I	I	*	I	I	I
3.0	20.4	9941	I	I	*	I	I	I
3.2	20.7	10429	I	I	*	I	I	I
3.4	20.9	10736	I	I	*	I	I	I
3.6	21.2	11446	I	I	*	I	I	I
3.8	21.4	11946	I	I	*	I	I	I
4.0	21.6	12425	I	I	*	I	I	I
4.2	21.7	12775	I	I	*	I	I	I
4.4	22.0	13253	I	I	*	I	I	I
4.6	22.2	13676	I	I	*	I	I	I
4.8	22.4	14024	I	I	*	I	I	I
5.0	22.5	14338	I	I	*	I	I	I
5.2	22.7	14617	I	I	*	I	I	I
5.4	22.8	14764	I	I	*	I	I	I
5.6	22.9	15031	I	I	*	I	I	I
5.8	22.9	15270	I	I	*	I	I	I
6.0	23.0	15433	I	I	*	I	I	I
6.2	23.1	15571	I	I	*	I	I	I
6.4	23.1	15663	I	I	*	I	I	I
6.6	23.2	15735	I	I	*	I	I	I
6.8	23.2	15862	I	I	*	I	I	I
7.0	23.2	15922	I	I	*	I	I	I
7.2	23.3	15967	I	I	*	I	I	I
7.4	23.3	15996	I	I	*	I	I	I
7.6	23.3	16112	I	I	*	I	I	I
7.8	23.3	16715	I	I	*	I	I	I
8.0	23.3	16006	I	I	*	I	I	I
8.2	23.3	15967	I	I	*	I	I	I
8.4	23.3	15958	I	I	*	I	I	I
8.6	23.2	15920	I	I	*	I	I	I
8.8	23.2	15675	I	I	*	I	I	I
9.0	23.2	15822	I	I	*	I	I	I
9.2	23.2	15762	I	I	*	I	I	I
9.4	23.1	15637	I	I	*	I	I	I
9.6	23.1	15627	I	I	*	I	I	I
9.8	23.1	15552	I	I	*	I	I	I
10.0	23.0	15474	I	I	*	I	I	I


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      *
      *   RIVER ENGINEERING MODEL
      *   GUNNISON RIVER MODEL
      *   GOOSE POND LAKE MODEL
      *
      *   GOOSE POND LAKE EROSION MODEL
      *
      *   EROSION MODEL INPUT DATA
      *

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INPUT CONTROL PARAMETERS FOR GOOSE POND LAKE DAM		
PARAMETER	VARIABLE	VALUE
NUMBER OF EROSION POINTS REACHED	NP	1
TYPE OF RESERVOIR INLET TIME	RT	0
MAXIMUM TIDE HEIGHT	MTH	0.001
EROSION MATERIALIZATION EROSION SUMMARY	EMS	0
NO. OF RESERVOIR LINES IN HYDROGRAPH RATIONS	ITER	1
INTERVAL OF OBSERVED AND PREDICTED EROSION WHEN ON EROSION	CE	0
FLUID-POROSITY MODEL PARAMETERS	FPM	0
LAWCELLIDE PARAMETERS	LCP	0

CROSS-SECTIONAL PARAMETERS FOR GOOSE POND EROSION BELOW GOOSE POND LAKE DAM		
PARAMETER	VARIABLE	VALUE
NUMBER OF CROSS-SECTIONS	NS	14

MAXIMUM NUMBER OF TOP WIDTHS	NCS	8
NUMBER OF CROSS-SECTIONAL HYDROGRAPHS TO PLOT	NTT	1
TYPE OF OUTPUT OTHER THAN HYDROGRAPH PLOTS	JNK	0
CROSS-SECTIONAL SMOOTHING PARAMETER	KSA	0
DOWNTSTREAM SUPERCRITICAL OR NOT	ASUPC	0
NO. OF LATERAL INFLOW HYDROGRAPHS	LQ	0
NO. OF POINTS IN GATE CONTROL CURVE	KCG	0

NUMBER = 8 (MAX=8) WHERE HYDROGRAPH DECODED
(MAX NUMBER OF HYDROGRAPHS = 8)

2

CROSS-SECTIONAL VARIABLES FOR BIDGE RIVER REACH
FEL W. 3000E & ND LAKE DAM

PARAMETER	UNITS	VARIABLE
LOCATION OF CROSS-SECTION	MI	CSE1
ELEVATION (MSL) OF FLOODING AT CROSS-SECTION	FT	FSTG1
ELEV. CORRESPONDING TO EACH TOP WIDTH	FT	4814.0
TOP WIDTH CORRESPONDING TO EACH ELEV. (ACTIVE FLOW PORTION)	FT	384.0
TOP WIDTH CORRESPONDING TO EACH ELEV. (OFF-CHANNEL PORTION)	FT	135.0
SURFACE AREA CORRESPONDING TO EACH ELEV.	ACRES	DSA 4.0
SURFACE AREA CORRESPONDING TO EACH ELEV. (ACTIVE FLOW PORTION)	ACRES	SEA 4.0
SURFACE AREA CORRESPONDING TO EACH ELEV. (OFF-CHANNEL PORTION)	ACRES	SEA 0.0

NUMBER = CROSS-SECTION
WHERE IS ELEVATION LEVEL

1

CROSS-SECTION NUMBER = 1

FEET = 5.500	FEET = 3.00	FEET = 0.0	FEET = 0.0
FEET = 550.0	FEET = 30.0	FEET = 0.0	FEET = 0.0
FEET = 48.0	FEET = 134.0	FEET = 135.0	FEET = 135.0
FEET = 0.0	FEET = 0.0	FEET = 0.0	FEET = 0.0

REACH-SECTION NUMBER 2

YR 1	=	6.500	YRS 2,3 =	2.00	YR 4	=	2.0	YR 5,6 =	0.0
PE 1	...	750.0	750.0	750.0	750.0	750.0	750.0	750.0	800.0
PE 2	...	32.0	100.0	300.0	400.0	600.0	800.0	1200.0	1500.0
PE 3	...	0.0	200.0	300.0	500.0	700.0	1000.0	0.0	0.0

DA - DYNAMIC COEFFICIENTS FOR THE REACHES
DA(i) = 1.0 / (1 + i) WHERE i = REACH NUMBER

DA(1) = 1.0 / 1.040 = .952 DA(2) = 1.0 / 1.060 = .935 DA(3) = 1.0 / 1.080 = .913

B-21

DOWNSTREAM FLOW PARAMETERS FOR GOOSE POND BELOW
BELOW GOOSE POND LAKE DAM

PARAMETER	UNITS	VARIABLE
MIDPOINT DISTANCE (IN FEET)	FT	DYN 1
CONTRACTION - EXPANSION COEFFICIENTS BETWEEN REACHES	PERCENT	DYN 2

REACH NUMBER	DYNAMIC	PERCENT
1	.300	0.000

DOWNSTREAM FLOW PARAMETERS FOR GOOSE POND BELOW
BELOW GOOSE POND LAKE DAM

PARAMETER	UNITS	VARIABLE	VALUE
MAY DISCHARGE AT DOWNSTREAM EXTREMITY	CFS	OMAHD	0.0

MAX LATERAL OUTFLOW PRODUCING LOSSES	CFS/FT	QLL	0.000
INITIAL SIZE OF TIME STEP	HR	DTHM	0.0000
INITIAL WATER SURFACE ELEVATION DOWNSTREAM	FT	VDN	0.00
SLOPE OF CHANNEL DOWNSTREAM OF DAM	FT/MI	SOM	10.00
THETA WEIGHTING FACTOR		THETA	0.00
CONVERGENCE CRITERION FOR STAGE	ST	EPSY	0.000
TIME AT WHICH DAM STARTS TO FAIL	HR	T_TFI	0.00

NUMBER OF TIME STEPS 1000000000

PARAMETER	UNITS	AVAILABLE	VALUE
TIME TO FAILURE	s	YES	10.000
TIME TO START OF RISING TIME OF HYDROGENS	s	YES	0.000
TIME TO PEAK	s	NO	7.400
TIME STEP SIZE	s	NO	1.000

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1960

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SECTION 10 - ATTACHMENT STATEMENT

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	7.000	15833.7	763.78	0.00	799.09	.07	0.0	.0	15826.3	0.0	15186.7

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	7.500	15931.8	763.81	0.00	799.09	.07	0.0	.0	15923.1	0.0	15186.7

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	8.000	15933.3	763.82	0.00	799.09	.07	0.0	.0	15926.3	0.0	15186.7

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	8.500	15859.8	763.79	0.00	799.09	.07	0.0	.0	15782.7	0.0	15186.7

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	9.000	15769.1	763.77	0.00	799.09	.07	0.0	.0	15622.7	0.0	15186.7

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	9.500	15657.1	763.80	0.00	799.09	.07	0.0	.0	15419.7	0.0	15186.7

RESERVOIR OUTFLOW INFORMATION

	K	TT	Q(1)	H2	Y3	D	SUB	OUTVOL	BB	Q(1)	QBRECH	QSPIL
4	1	10.000	15726.3	763.83	0.00	799.09	.07	0.0	.0	15526.3	0.0	15186.7

EXECUTION COMPLETED.

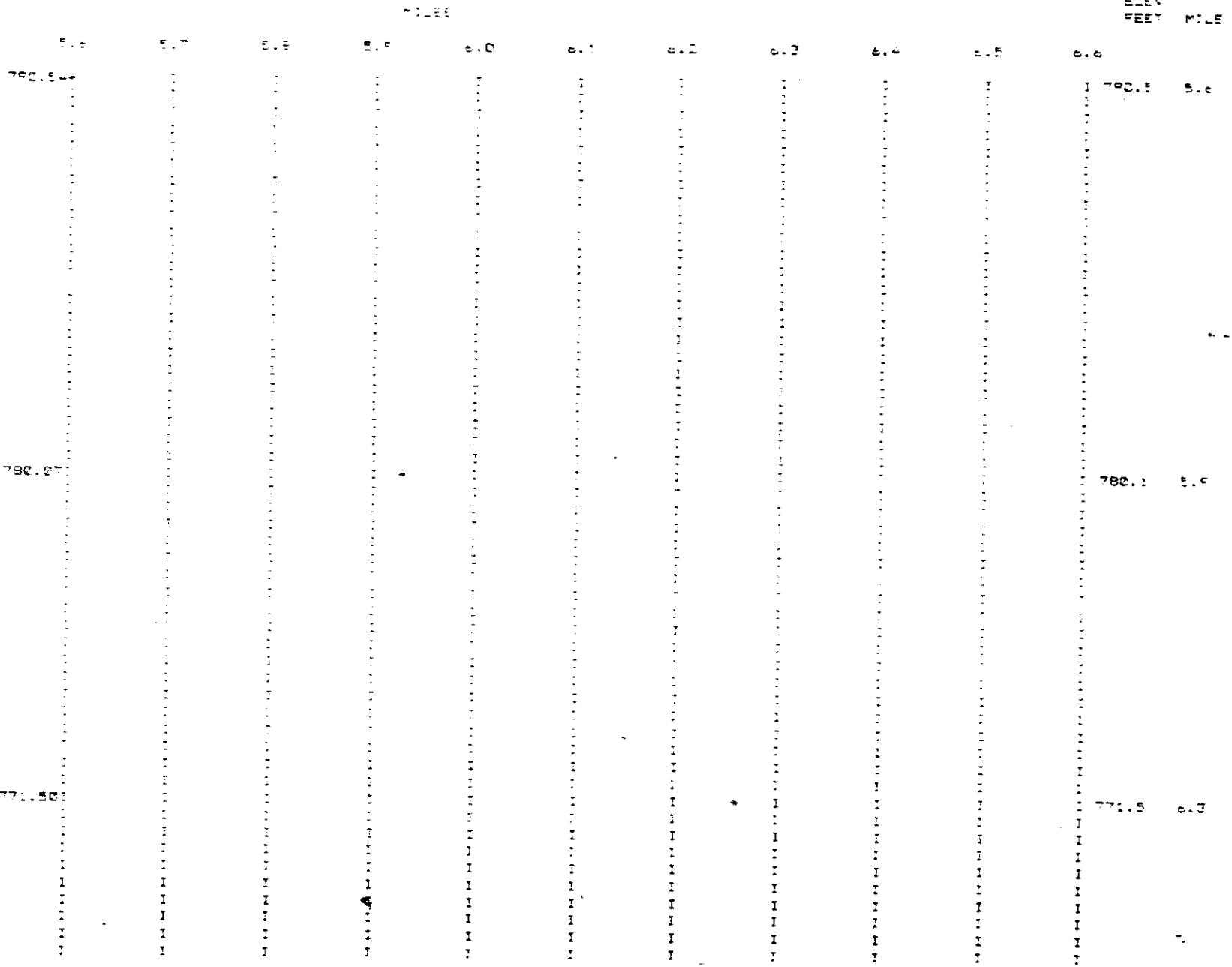
ATIME = 10 ALLOWABLE = TIME = 8.26 TT = 10.0

PROFILE OF CRESTS AND TIMES FOR 100' FWD. DROPS
BELOW GROSS POND LEVEL

OUTFLOW	MAX ELE	MAX FWD	TIME MAX	MAX ELE	MAX ELE	TIME FWD	TIME ELE
0.0000	157.00	157.00	10.00	157.00	157.00	10.00	10.00

	780.10	780.15	780.20	780.25	780.30	780.35	780.40	780.45	780.50	780.55	780.60	780.65	780.70	780.75	780.80	780.85	780.90	780.95	781.00
780.00	780.04	780.08	780.12	780.16	780.20	780.24	780.28	780.32	780.36	780.40	780.44	780.48	780.52	780.56	780.60	780.64	780.68	780.72	780.76
780.05	780.09	780.13	780.17	780.21	780.25	780.29	780.33	780.37	780.41	780.45	780.49	780.53	780.57	780.61	780.65	780.69	780.73	780.77	780.81
780.10	780.14	780.18	780.22	780.26	780.30	780.34	780.38	780.42	780.46	780.50	780.54	780.58	780.62	780.66	780.70	780.74	780.78	780.82	780.86
780.15	780.19	780.23	780.27	780.31	780.35	780.39	780.43	780.47	780.51	780.55	780.59	780.63	780.67	780.71	780.75	780.79	780.83	780.87	780.91
780.20	780.24	780.28	780.32	780.36	780.40	780.44	780.48	780.52	780.56	780.60	780.64	780.68	780.72	780.76	780.80	780.84	780.88	780.92	780.96

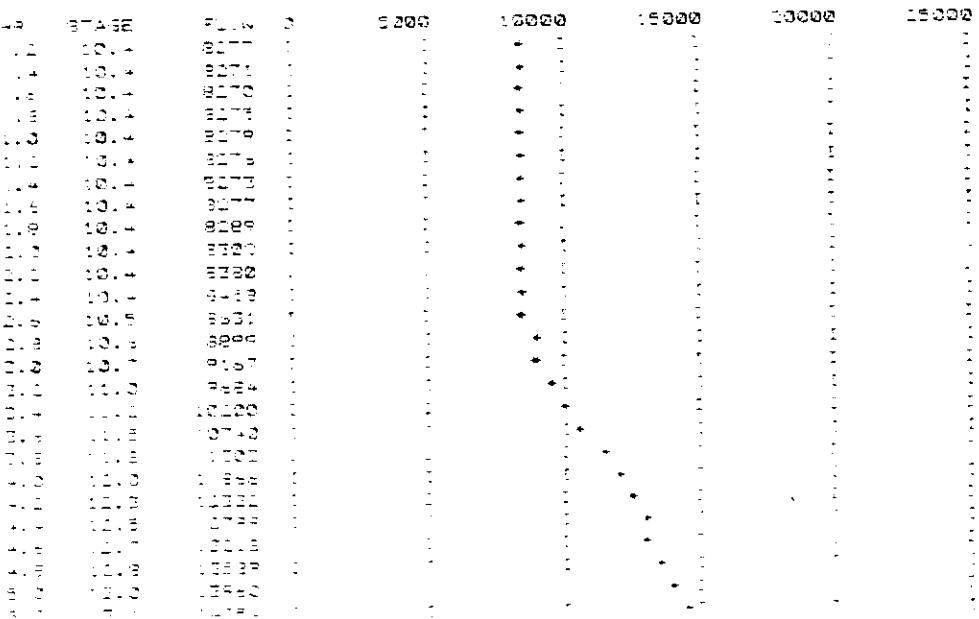
604 - ELEVATION PROFILE



604

DISCHARGE HYDROGRAPH FOR GOOSE POND STREAM ... STATION NUMBER 4
DOWNSTREAM FROM GOOSE POND LAKE DAM AT MILE 6.50

Gauge Depth = 162.32 ft. Elevation Reached by Flood Wave = 163.31
Flood Stage Not Available
Max Stage = 134.82 ft. at Time = 8.200 hours
Max Flood = 15822 cfs at Time = 8.200 hours



14.0	14054
14.0	14549
14.0	14806
14.0	15026
14.0	15246
14.0	15304
14.0	15542
14.0	15650
14.0	15747
14.0	15834
14.0	15873
14.0	15912
14.0	15932
14.0	15933
14.0	15933
14.0	15874
14.0	15834
14.0	15781
14.0	15729
14.0	15660
14.0	15590
14.0	15510
14.0	15440
14.0	15366

READY.

B3646B LOG OFF 11.16.47.

SEL = 1.63c

TIC = 245977

DAF CONNECT TIME 00.43.34.
LOGGED OUT.